Listing of Claims

1. (Original) A process for producing a chimaeric viral vector comprising;

culturing a host cell which comprises one or more Simian Immunodeficiency Virus (SIV) nucleic acid sequences capable of producing an SIV capsid and which further comprises a vector comprising a Human Immunodeficiency Virus type 2 (HIV-2) packaging signal and a heterologous nucleic acid sequence;

said vector being packaged in the SIV capsid to produce a chimaeric virus comprising the heterologous nucleic acid sequence.

2. (Currently amended) A process according to claim 1 comprising:

(1) infecting the host cell with the vector which comprises the human Immunodeficiency Virus type 2 (HIV-2) packaging signal and a heterologous nucleic acid sequence, and/or

(2) infecting the host cell with a first vector which comprises the one or more Simian Immunodeficiency Virus (SIV) nucleic acid sequences capable of producing an SIV capsid and a second vector which comprises the human Immunodeficiency Virus type 2 (HIV-2) packaging signal and a heterologous nucleic acid sequence.

3. (Cancelled)

4. (Currently amended) A process for producing a Simian Immunodeficiency Virus (SIV) encoding a heterologous gene, which process comprises:

infecting a host cell with a first vector which is capable of producing SIV capsid and a second vector comprising a Human Immunodeficiency Virus type 2 (HIV-2) packaging signal sufficient to package the vector in the SIV capsid and a heterologous gene capable of being expressed by the vector; and

culturing the host cell.

5. (Currently amended) A process according to ~~claim 3 or 4~~ claim 2 wherein

the first vector is a SIV vector comprising a mutation within an SIV packaging signal such that viral RNA is not packaged within an SIV capsid, and/or

the first vector is a packaging defective SIV vector.

6. (Cancelled)

7. (Currently amended) A process according to claim 5 ~~or claim 6~~ wherein said mutation comprises one or more of:

a deletion in the region between the primer binding site and the 5' major splice donor site of SIV;

a deletion within the DIS structure;

a deletion of a sequence of SEQ ID NO: 2

a deletion of a fragment of SEQ ID NO: 2 5 or more nucleotides in length;

a variation of SEQ ID NO: 2 or a fragment thereof of 5 or more nucleotides in length;

a deletion in the region of nucleotides 53 to 85 of SEQ ID NO: 2;

a deletion in the region between the 5' major splice donor and the gag initiation codon;

a deletion of SEQ ID NO: 3;

a deletion of a fragment of SEQ ID NO: 3 5 or more nucleotides in length; and/or

a variation of SEQ ID NO: 3 or a fragment thereof of 5 or more nucleotides in length.

8. – 12. (Cancelled)

13. (Currently amended) A process according to ~~any one of claims 3 to 12~~claim 2 wherein the first vector does not comprise replication-competent SIV.

14. (Currently amended) A process according to ~~any one of the preceding claims~~claim 2 wherein the SIV capsid comprises an envelope protein from a retrovirus other than SIV

15. (Original) A process according to claim 14 wherein the nucleic acid sequence encoding the envelope protein from a retrovirus other than SIV is operably linked to an 5' LTR sequence from the same retrovirus

16. (Currently amended) A process according to ~~any one of claims 3 to 15~~claim 2 wherein said second vector comprises one or more of:

(a) a sequence of SEQ ID ~~no~~ NO: 1 or a variant thereof;,

(b) an internal fragment thereof of 5 or more nucleotides in length;~~, or~~

(c) a fragment thereof of 17 or more nucleotides in length;

(d) the matrix (MA) region of the gag ORF or a fragment thereof;

(e) nucleic acids 553 to 912 of HIV-2 RNA or a fragment thereof;

(f) one or more nucleic acid sequences from the 5' and 3' LTRs of HIV-2, which direct the expression and reverse transcription of the second vector and the integration of the second vector into the genome of a target cell; and/or

(g) a promoter region operably linked to the heterologous gene or nucleic acid sequence.

17. – 18. (Cancelled)

19. (Currently amended) A process according to ~~any one of claims 3 to 18~~claim 2 wherein the second vector is replication deficient.

20. (Cancelled)

21. (Currently amended) A process according to claim ~~20~~ 16 wherein the second vector comprises a mutation in the U3 region of the 3' LTR of the vector, said mutation being copied during reverse transcription such that the long terminal repeat promoter is inactivated

22. (Cancelled)

23. (Currently amended) A process according to ~~any one of claims 3 to 22~~claim 2 wherein the said first and/or second vector are:

integrated into the genome of the host cell, or

extra-chromosomal in the host cell.

24. (Cancelled)

25. (Currently amended) A process according to ~~any one of the preceding claims~~claim 2 wherein the heterologous gene or nucleic acid sequence encodes a therapeutic protein or peptide, an antigen protein or peptide.

26. (Currently amended) A process according to ~~any one of the preceding claims~~claim 2, further comprising:

_____isolating and/or purifying the virus comprising the heterologous nucleic acid sequence, and/or

_____formulating the virus comprising the heterologous nucleic acid sequence with a pharmaceutically acceptable excipient.

27. (Cancelled)

28. (Currently amended) A process according to ~~any one of the preceding claims~~claim 2 wherein the virus is suitable for infection of human and non-human primate cells.

29. (Original) A process for making a producer cell for the generation of chaemeric virus comprising:

infecting a host cell which comprises one or more Simian Immunodeficiency Virus (SIV) nucleic acid sequences capable of producing an SIV capsid, with a vector comprising a Human Immunodeficiency Virus type 2 (HIV-2) packaging signal and a heterologous nucleic acid sequence.

30. (Original) A process according to claim 29 wherein the host cell is infected with a first vector which comprises the one or more Simian Immunodeficiency Virus (SIV) nucleic acid sequences capable of producing an SIV capsid

31. (Currently amended) A process according to claim 29, ~~or claim 30~~ further comprising one or more of:

_____isolating and/or purifying the infected cell; and/or

culturing said infected cell.

32. (Cancelled)

33. (Currently amended) A virus produced by ~~a~~ the process of ~~any one of claims 1 to 28~~claim 1.

34. (Original) A virus according to claim 33 which is capable of infecting human and non-human primate cells.

35. (Cancelled)

36. (Currently amended) A host cell produced by a process of ~~any one of claims 29 to 32~~claim 29.

37. (Currently amended) A host cell according to ~~claim 35 or~~ claim 36 which is a human or non-human primate cell.

38. (Original) A vector system comprising a first vector which is capable of producing SIV capsid and a second vector comprising a Human Immunodeficiency Virus type 2 (HIV-2) packaging signal sufficient to package the vector in the SIV capsid and a cloning site suitable for insertion of a heterologous gene capable of being expressed by the vector.

39. (Original) A vector system according to claim 38 wherein a heterologous gene is inserted into the cloning site.

40. (Currently amended) A kit comprising a first vector and a second vector of the vector system of claim 38~~a first vector which is capable of producing SIV capsid and a second vector comprising a Human Immunodeficiency Virus type 2 (HIV-2) packaging signal sufficient to package the vector in the SIV capsid and a cloning site suitable for inserted of a heterologous gene capable of being expressed by the vector~~.

41. (Currently amended) A method of producing a pharmaceutical composition for use in gene therapy comprising;

producing a virus by a process of ~~any one of claims 1 to 28~~claim 1, and;

formulating the virus with a pharmaceutically acceptable excipient.

42. (Currently amended) A pharmaceutical composition produced by the method of claim 41~~comprising a virus according to claim 33 or 34, a vector system according to claim 38 or 39 or a host cell according to any one of claims 35 to 37, and a pharmaceutically acceptable carrier~~.

43. – 48. (Cancelled)

49. (Currently amended) A method of delivering a therapeutic or antigenic protein or peptide to an individual comprising;

administering to the individual an effective amount of a virus according to claim 33~~ or 34~~, or a vector system, host cell, or pharmaceutical composition ~~according to claim 38 or 39~~comprising said virus~~, a host cell according to any one of claims 35 to 37, or a pharamaceutical composition of claim 42~~.

50. (Original) A method according to claim 49 wherein the individual is a human or non-human primate.

51. (Currently amended) A method of transfecting a cell with a heterologous nucleic acid sequence comprising;

producing a virus by a process according to according ~~to any one of claims 1 to 28~~claim 1, and;

contacting the virus with a target cell.

52. (Cancelled)

53. (Currently amended) A method according to claim 51 ~~or claim 52~~ wherein the cell is a CNS cell.

54. (Original) A method according to claim 53 wherein the cell is a glial cell, astrocyte, or neural stem cell.

55. (Currently amended) A method of determining the biosafety of an agent comprising;

administering to a non-human primate an effective amount of an agent selected from the group consisting of: a virus according to claim 33 ~~or 34~~, a vector system ~~according to claim 38 or 39~~comprising said virus, ~~or~~ a host cell ~~according to any one of claims 35 to 37~~comprising said virus, or a ~~pharamaceutical~~pharmaceutical composition ~~of claim 42~~comprising said virus,

and determining the effect of said administration on the primate.

56. (Cancelled)